

## **Protocol Development Summary**

**NETN protocol:** Visitor Use

### **NETN parks where protocol will be implemented:**

Acadia NP (ACAD), Appalachian NST (APPA), Boston Harbor Islands NRA (BOHA), Marsh-Billings-Rockefeller NHP (MABI), Minute Man NHP (MIMA), Morristown NHP (MORR), Roosevelt-Vanderbuilt NHS (ROVA), Saint-Gaudens NHS (SAGA), Saratoga NHP (SARA), Saugus Iron Works NHS (SAIR), Weir Farm NHS (WEFA)

### **Justification/issues being addressed:**

The human population of New England has more than doubled over the past century, and in southern New England, human population density is among the highest in the United States. Accordingly, several NETN parks have high visitation rates, especially ACAD, APPA, MIMA, ROVA and MORR. Hikers can increase erosion on and around trails, trample nearby vegetation and cause soil compaction. These impacts can be particularly significant in high elevation areas and in areas where trails are poorly marked. Hikers can also disturb wildlife. Car traffic within parks can cause wildlife fatality, and reinforce the fragmentation effects associated with roads. Horse-riding is permitted within several NETN parks, and horses can contribute to trampling and trail erosion, and perhaps aid in the spread of invasive exotic species. Snowmobiling is permitted within ACAD, and may cause winter-time disturbance to wildlife. Visitors can impact freshwater aquatic habitats by extracting natural resources such as fish, and by contributing to erosion, road runoff, contamination, and the introduction of invasive species. Visitor impacts to rocky intertidal sites at ACAD and BOHA can also create significant ecological disruptions.

This protocol addresses the Visitor Usage Vital Sign ranked as a high priority vital sign for NETN. The Visitor Usage Vital Sign is also addressed in part by the Open Uplands Vegetation Protocol and the Rocky Intertidal Protocol.

### **Specific monitoring questions and objectives to be addressed by the protocol:**

Our overall goal is to monitor the status and trends of NETN ecological resources in order to assess ecological integrity and the impacts of key agents of change acting upon these resources, and to inform management decisions affecting these resources. The specific objectives of this protocol are: 1) To assess the impacts of visitor use on ecological resources within NETN parks; and 2) To inform management decisions affecting visitor use of NETN parks, such as regulations governing visitor access and activities, and the development and maintenance of park trails.

Specific monitoring questions this protocol will address are:

What are current levels of visitation, how are those visitors distributed across the park, and what activities are those visitors engaging in?

To what degree do trampling impacts alter soil compaction, vegetation diversity, and vegetation condition within NETN open upland systems?

To what degree is wildlife disturbed by human visitation at key sites within NETN parks?

What is the state of the trail network along the Appalachian Trail? Specifically, what is the current status and trends in levels of trail erosion, trail widening, and the proliferation of visitor-created side trails?

How are visitors affecting aquatic and intertidal resources, including the effects of trampling, harvesting, and the potential introduction of exotic species?

**Basic approach:**

Recognition of the importance of visitor impacts on ecological resources within the national parks has been growing, and research into effective methods for assessing these impacts is increasing. NETN plans to draw upon this growing body of scientific knowledge in selecting appropriate methods.

Current visitation levels, locations and activities at all NETN parks will be compiled from park records. Additional information on visitor locations and activities will be collected where necessary, from visual surveys and/or remote counting devices.

Visitor impacts within open upland habitats will be monitored as part of the open upland vegetation protocol; that approach is outlined within the Open Upland PDS.

The degree of wildlife disturbance by human visitation will be qualitatively assessed at a small number of key sites within NETN parks.

Visitor impacts on trail erosion, trail width and side-trail formation will be monitored along the Appalachian Trail using rapid assessment methods similar to those of Marion and Leung (2001).

Whenever possible, NETN will build on existing programs, such as the Visitor Experience and Resource Protection (VERP) program at Acadia.

**Principal investigators and NPS lead:**

This protocol will be developed jointly by SUNY ESF and NatureServe under cooperative agreements with PI James Gibbs and Geri Tierney, both of SUNY ESF, with PI Don Faber-Langendoen of NatureServe, and with PIs Pam Lombard and Hillary Neckles of USGS. NETN network coordinator Brian Mitchell is the NPS lead.

**Development schedule, budget, and expected interim products:**

Protocol development is on hold due to limitations for funding development and implementation.

The budget for development of this protocol is estimated to be \$15,000, which includes partial salary staff responsible for drafting SOPs, and costs for field testing draft protocols.

**Literature cited:**

Marion, JL and YF Leung. 2001. Trail resource impacts and an examination of alternative assessment techniques. *Journal of Park and Recreation Administration* 19(3): 17-37.